Index

A	emulsions, 3-4, 3-18
accelerators, 4-7	Atterberg limits, 2-7, 2-89
additive, 5-1, 5-2, 5-5, 5-6	В
admixtures, 4-2, 4-3, 4-7, 4-8, 4-9, 4-20	bite test, 2-21
adsorption, 2-6, 2-7	bitumen,
aerial photographs, 2-28, 2-30, 2-32	characteristics, 3-7
aggregate, 3-1	field-identification tests, 3-14
base and pavement, 2-33, 3-39	asphalts and tars, 3-16
blended, 3-37, 3-39, 3-40	asphalt emulsion, 3-18
characteristics, 3-19, 3-31	cements and cutbacks, 3-16
coarse, 3-21, 3-32, 3-33—3-34, 4-4	road tars, 3-18
deterioration, 4-5	safety precautions, 3-7
durability, 3-19, 3-32, 4-3, 4-9	bituminous design,
fine, 3-21, 3-32, 3-34—3-37, 4-4	blends, 3-41
gradation, 2-2, 3-21, 3-32, 3-41, 4-10, 4-11	compaction and shear test, 3-44
identification, 3-19	gyratory test, 3-41
in concrete, 4-3, 4-4	hot mix, 3-40
mineral filler, 3-22, 3-32	job-mix formula, 3-60
sampling, 3-13	marshall test, 3-46
selection, 4-97	optimum bitumen content, 3-41
sieve analysis, 3-32, 3-66, 3-72, 4-4	surface-area method, 3-59
specific gravity, 3-32—3-39, 4-13—4-15	variables, 3-41
surface moisture, 4-13—4-17	wall-friction test, 3-45
air-content test, 4-17, 4-20, 4-21	borderline soils, 2-11
air-entraining agents, 4-2, 4-8, 4-9	bulk specific gravity, 2-5, 2-69
apparent specific gravity, 2-5, 2-69, 3-32, 3-33—3-37, 4-13, 4-14	C calcium carbide, 2-57, 2-58
asphalts,	calibration,
cement, 3-16	
cutback, 3-4, 3-16	gyratory test machine, 3-45 hydrometer, 2-79

calibration (continued),	complete saturation, 2-109
sand displacement, 2-117	composite sample, 2-37
volumetric flask, 2-64	compression test, 4-25
California Bearing Ratio (CBR),	concrete,
expansive soils, 2-146	accelerators, 4-7
field in-place test, 2-134	admixtures, 4-7
free-draining soils, 2-150	aggregates, 4-3, 4-5, 4-9—4-17
test, 2-123, 2-124—2-134	air-content test, 4-20
undisturbed sample test, 2-38, 2-134	cement in, 4-1
cement, 4-1	compressive strength, 4-25, 4-28
air-entrained, 4-2	curing, 4-6
asphalt. See asphalts, cement.	cylinder, 4-25
hardening, 4-2	properties, 4-4
high-early strength, 4-7	retarders, 4-8
stabilizer, 5-3	slump test, 4-18
types, 4-2	test beams, 4-21
centrifugal extraction, 3-69	consistency limits. See Atterberg limits.
clay, 2-6, 2-7, 2-12, 2-21, 2-87	curing, 4-6, 4-22, 4-27
coarse aggregate. See aggregate, coarse.	cutter stock, 3-4
absorption, 4-13, 4-16	D
restriction, 4-4	deliberate survey, 2-26, 2-27
sieve analysis, 3-32	density,
specific gravity, 2-29, 3-33, 3-34	bituminous pavement, 3-72
surface moisture, 4-17	in-place, 2-116
coarse-grained soils, 2-9—2-11	maximum dry, 2-101
cohesive soils, 2-30, 2-32, 2-109 2-115	nuclear moisture-and-density tester, 2-123
cold-mix pavement, 3-56	sand-displacement test, 2-117
compaction,	soil, 2-5
curve, 2-109	stress deformation, 2-116
equipment, 2-115	water, 2-113
specifications, 2-112	water-displacement test, 2-123
test, 2-101, 2-154	dispersing agent, 2-80, 2-82
CBR mold, 2-45, 2-102	ductility test, 3-29
Proctor mold, 2-102	Dulin-Rotarex, 3-70

E	calibration, 2-83
emulsions,	dispersing agents, 2-82
asphalt, 3-4, 3-11, 3-18, 3-60	meniscus correction, 2-82
surface-area formula, 3-59	test, 2-80—2-87
entrapped air, 2-68	I
F	immersion-compression test, 3-21
feel test, 2-21	J
fine aggregate. See aggregate, fine.	job-mix formula, 3-60
specific gravity, 3-32—3-39	K
sieve analysis, 3-32	kinematic-viscosity test, 3-30
surface moisture, 4-13	L
fine-grained soils, 2-11	limits,
fineness modulus, 4-12	Atterberg. See Atterberg limits.
flash-point and fire-point tests, 3-22	liquid, 2-7, 2-90
flexural-strength test, 4-21, 4-22	plastic, 2-8
flocculate, 2-21	shrinkage, 2-8
freeze-thaw test, 5-7, 5-8	Los Angeles abrasion test, 3-39
fresh-concrete strength tests,	M
air content. See air-content test.	maps,
slump. See slump test.	agricultural, 2-29
frost, 5-6	geographical, 2-29
G	topographic, 2-29
grain shape, 2-3, 2-18	Marshall test, 3-46
grain-size, 2-18, 2-69	mechanical analysis, 2-70
gyratory test, 3-41	mechanical stabilization, 5-2
Н	mineral filler. See aggregate, mineral filler.
hardened concrete,	modulus of rupture. See flexural-strength
compressive-strength test, 4-25	test.
flexural-strength test, 4-21	moisture, 2-6
hasty survey, 2-26, 2-27	capillary action, 2-6
Hazen's effective size, 2-77	concrete curing, 4-6
hot-mix bituminous concrete, 3-40	content, 2-54—2-62
hydration, 4-1, 4-6, 4-7	gravitational, 2-6
hydrometer,	hydroscopic action, 2-6
analysis, 2-70, 2-79	surface, 4-17

N	bituminous, 3-12
nonplastic fines, 2-10	cylinders, 2-43—2-47
nuclear-moisture-density tester, 2-123	equipment,
0	CBR mold, 2-45—2-47
optimum bitumen content, 3-41	soil trafficability sampler, 2-43, 2-44
gyratory test, 3-41	pit, 3-13
Marshall test, 3-46	quartering, 2-48
surface-area method, 3-59	stockpile, 3-14
optimum moisture content, 2-54	sampling procedure,
P	bag, 2-36
penetration test, 3-27	CBR, 2-45
penetrometer, 3-27	chunk, 2-39
permafrost areas, 2-33	composite, 2-36
pH test, 5-5	cylinder, 2-43
pick-and-click test, 5-7	moisture content, 2-38
plant control,	stockpile, 4-9
centrifugal extraction, 3-69	undisturbed, 2-38
controlling production, 3-67	sand-displacement test, 2-117
density test, 3-72	Saybolt-Furor viscosity, 3-30
gyratory test, 3-68	sedimentation test, 2-19
high-type, 3-65	shine test, 2-25
intermediate type, 3-66	shrinkage limit, 2-8
Marshall test, 3-68	sieve analysis, 2-70
production, 3-66	slump test, 4-18
plasticizer, 4-9	softening-point test, 3-30
Q	soil,
quartering samples, 2-48—2-50	borderline, 2-11
R	coarse grained, 2-9—2-11
retarders, 4-8	field identification, 2-13
ribbon test, 2-25	field tests, 2-15
roll (thread) test, 2-22	fine-grained, 2-11
S	organic, 2-8
samples,	symbols, 2-9
aggregate, 3-13	

soil field-classification tests,	stabilization,
bite or grit, 2-21	additive, 5-2
breaking or dry strength, 2-24	frost areas, 5-6
feel, 2-21	mechanical, 5-2
odor, 2-19	stabilizing agents, 5-3—5-4
ribbon, 2-25	Stokes' law, 2-79
roll or thread, 2-22	stripping test, 3-20
sedimentation, 2-19	swell potential, 2-146
shine, 2-25	swell test, 3-20
visual, 2-15	T
wet shaking, 2-23	tars, 3-6
soil profile, 2-2	technical soils report, 2-152
soil stabilization,	test beams, 4-21
additive, 5-2	test pits, 2-31
bituminous, 5-2, 5-4	thin-film oven test, 3-31
frost areas, 5-6	U
mechanical, 5-2	undisturbed samples, 2-134
modification, 5-3	Unified Soil Classification System,
stabilizing agents 5-3,	classification factors, 2-9
soil trafficability, 2-43	coarse-grained soil, 2-9—2-11, B-5—B-8,
soils,	B-9
definition, 2-1	embankments and foundations, B-15—B-22
gradation, 2-4	fine-grained soil, 2-11, B-8, B-11
grain-size determination, 2-3	roads and airfields, B-22—B-26
particle shapes, 2-3	soil groups, B-4—B-9
plasticity characteristics, 2-2	V
properties, 1-2	viscosity tests, 3-30
solubility test, 3-30	kinematic, 3-30
specific gravity, 2-5, 2-62—2-68, 3-22	Saybolt-Furor, 3-30
apparent, 2-5, 2-69, 3-33, 3-34—3-37	W
bulk, 2-5, 2-69	water, in soil, 2-6
definition, 2-5	absorption, 2-6
mineral filler, 3-32	capillary fringe, 2-6
spot test, 3-31	capillary moisture, 2-6
	hygroscopic moisture, 2-6

FM 5-472/NAVFAC MO 330/AFJMAN 32-1221(I) -

subsurface, 2-6 wet-dry test, 5-7, 5-8 surface, 2-6 wet-shaking test, 2-19 water balloon device, 2-123 **Z** water-cement ratio, 4-5 zero air voids, 2-109

RETURN TO TOC